

Fig. 1

Field Name	Size (in bits)	Description
Queue Count 490A	5	This field is the number of output queues that contain this packet. When a packet is received, this field is initially set to the number of output queues on which the packet is inserted. This value is the number of 1 bits (i.e., asserted bits) in the port mask of the flow descriptor (after the source port has been removed from the mask). This field will be decremented as each output queue transmits the packet until the count reaches 0 when the packet (descriptor and cell memory) will be freed. This field may be stored in a separate queue count memory.
Cluster Count 490B	7	This field stores the number of clusters used by the packet. This is used by the read stored packet Manager to indicate how many clusters are to be freed when a packet is either read out or discarded.
Input Flow Number 490C	10	This field is used to track resources per flow and to update resources when the packet is freed.
Threshold Group / Virtual Channel Number 490D	5	This field is used to track resources per threshold group and to update resources when the packet is freed. The MSB (most significant bit) of this field indicates if the lower bits are group or VC (virtual channel) number: 1 = threshold group (4 bits) 0 = VC number (3 bits)
Cell List Head 490E	15	This field points to the first cell (cluster) of the packet's data. Note a linked list of cells (clusters) holds the packet data.
Cell List Tail 490F	15	This field points to the last cell (cluster) of the packet's data. Note a linked list of cells (clusters) holds the packet data.
Tail Valid 490G	1	This field indicates whether the packet has completely been written to memory as of the time that the packet descriptor is written, and thus whether the tail cell pointer is valid. This is used by the read stored packet manager in the case of an early-forwarded packet.
Error Detected 490H	1	This field indicates whether any error has been detected by the fabric before writing to memory. This bit is the ERR (error) bit of the packet. It is written at the end of a packet, when the Cell List Tail and Tail Valid signals are updated. For multiple cell packets, this bit is cleared on the first write of the packet descriptor.
To Be Dropped 490I	1	This bit indicates that the packet is to be dropped when it is scheduled. This occurs for packets when resources are depleted after it has already begun to be written to memory. In some embodiments it may be guaranteed that this packet is never early-forwarded, and thus can be dropped when it is started to be read.
Source Port 490J	5	This field contains the port from which the packet was received. This value is used when a packet is freed to adjust the resource allocation fields in the appropriate input port descriptor.
High Priority 490K	1	This field indicates if the packet is high priority. If this bit is set, the packet is not subject to thresholding. The packet is only dropped if there are no more "non-VC" (non-virtual channel) resources available.

Fig. 2

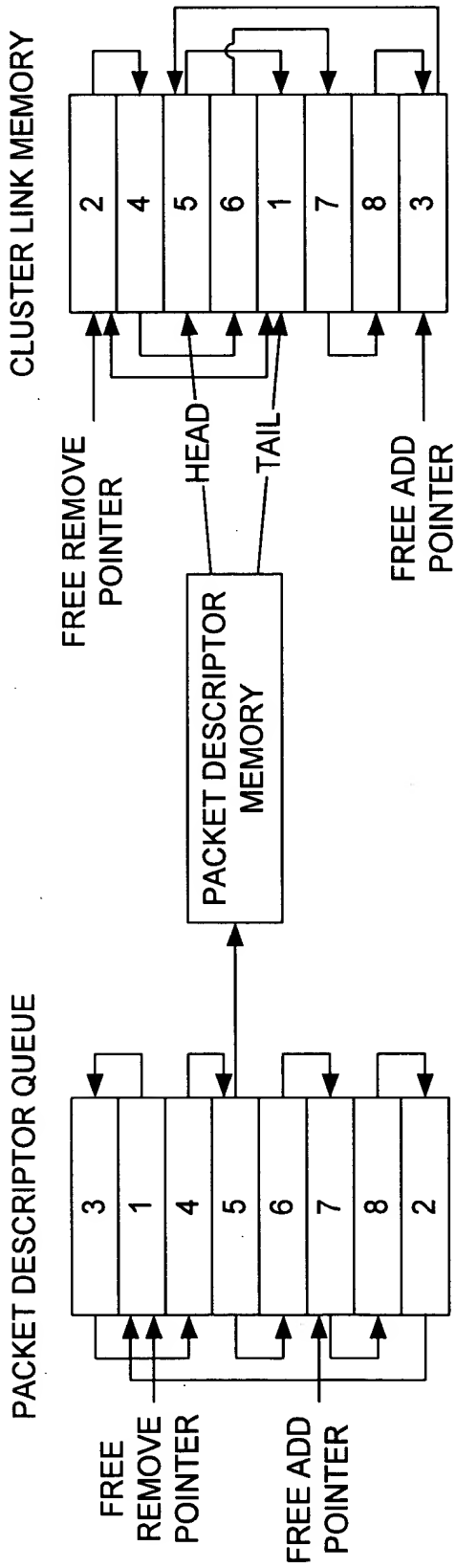


Fig. 3

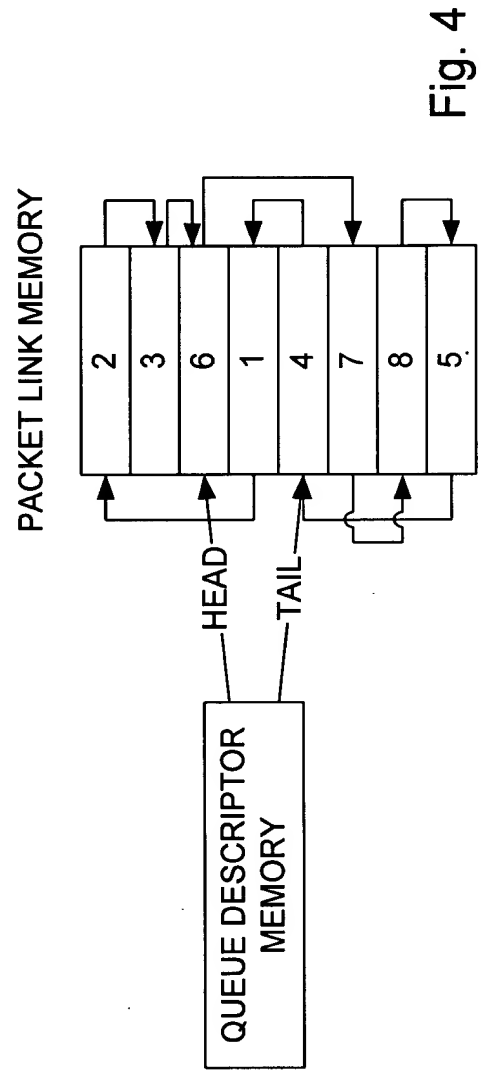


Fig. 4

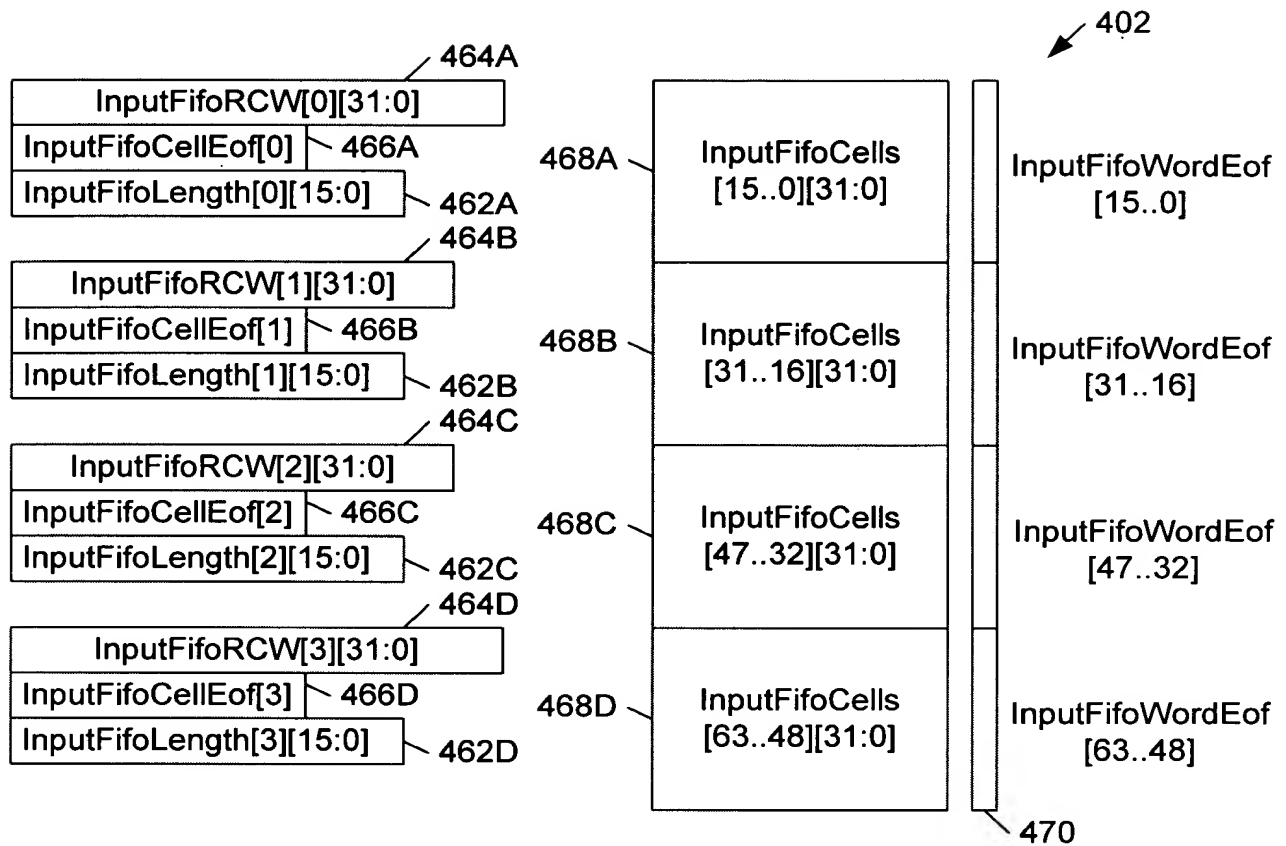


Fig. 5

	FIFO Pointer	Function
472A	<b>HeadCellPtr[1:0]</b>	Points to the current head cell
472B	<b>TailCellPtr[1:0]</b>	Points to the current tail cell
474	<b>SavedFirstCellPtr[1:0]</b>	Points to the saved first cell for the currently read packet
476	<b>WriteWordPtr[3:0]</b>	Points to the word within the tail cell that is being written to
478	<b>SfReadWordPtr[3:0]</b>	Points to the word within the head cell that is being read from for store and forward
480	<b>CtReadWordPtr[3:0]</b>	Points to the word within the head cell that is being read from for cut-through

Fig. 6

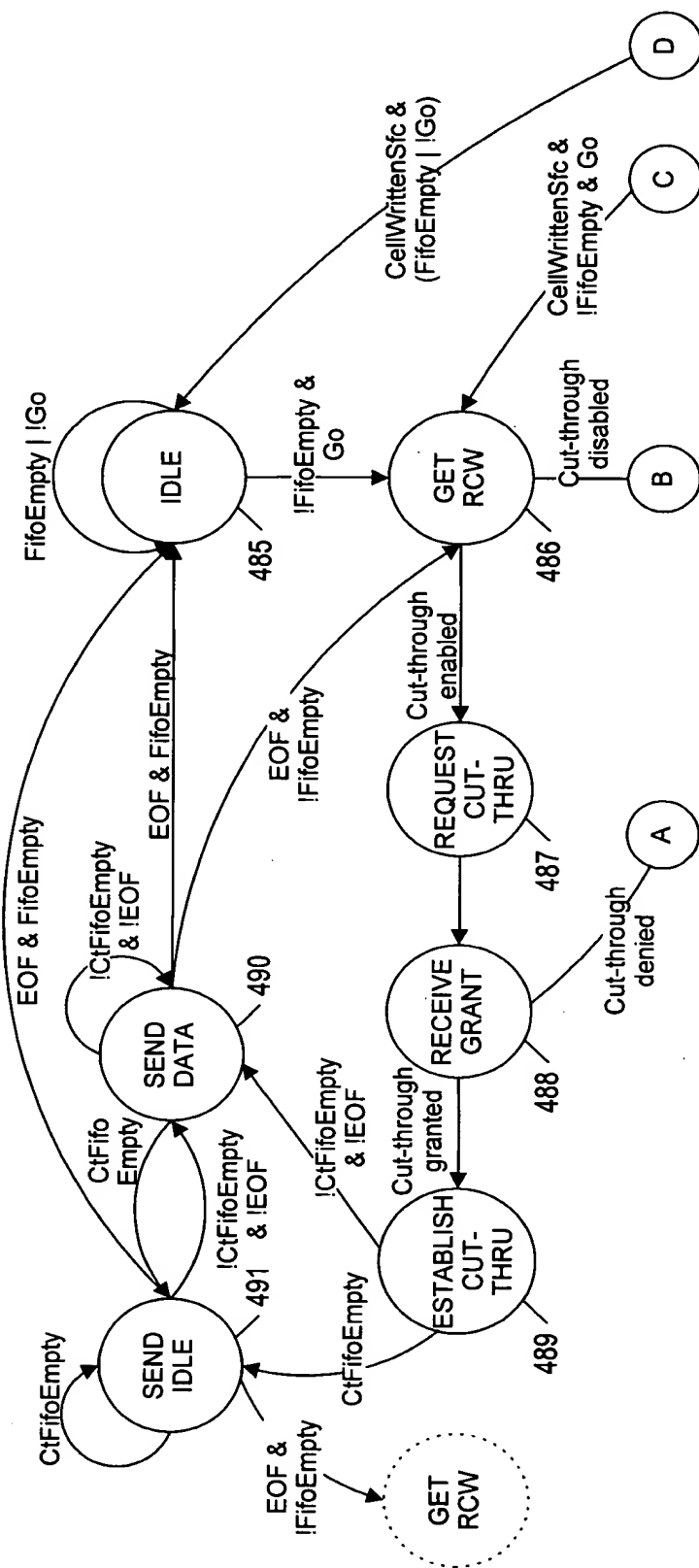


Fig. 7

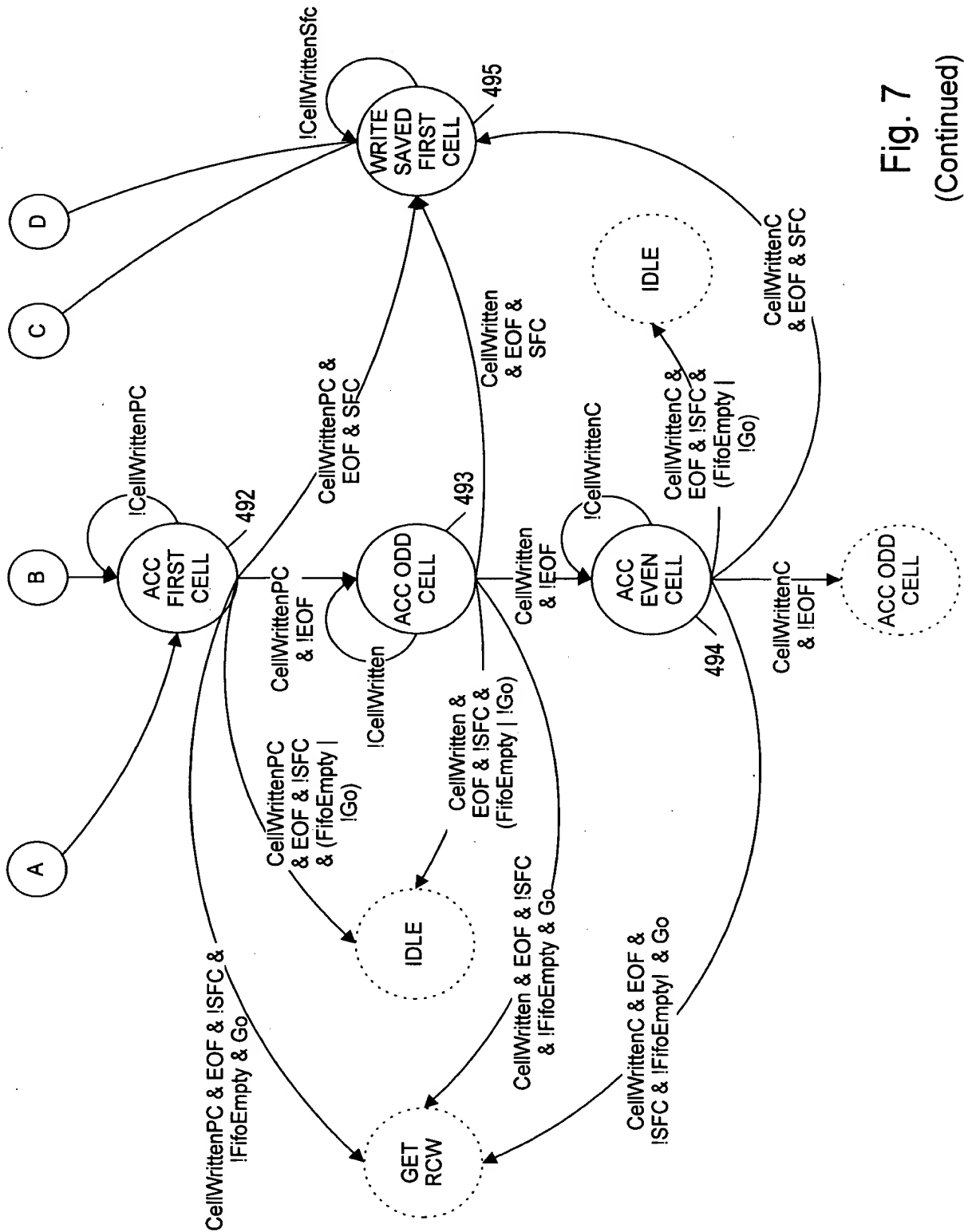


Fig. 7  
(Continued)

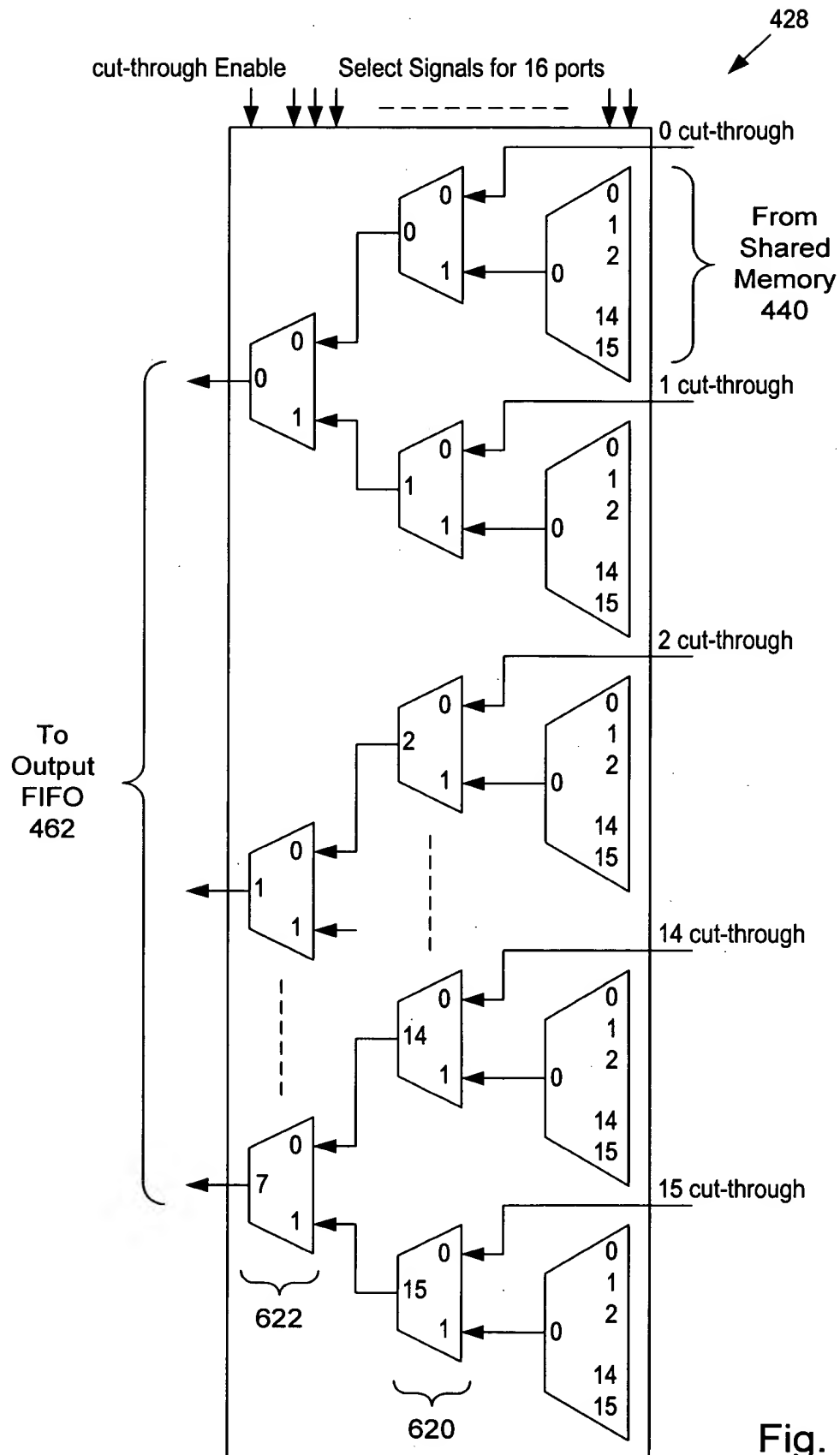


Fig. 8

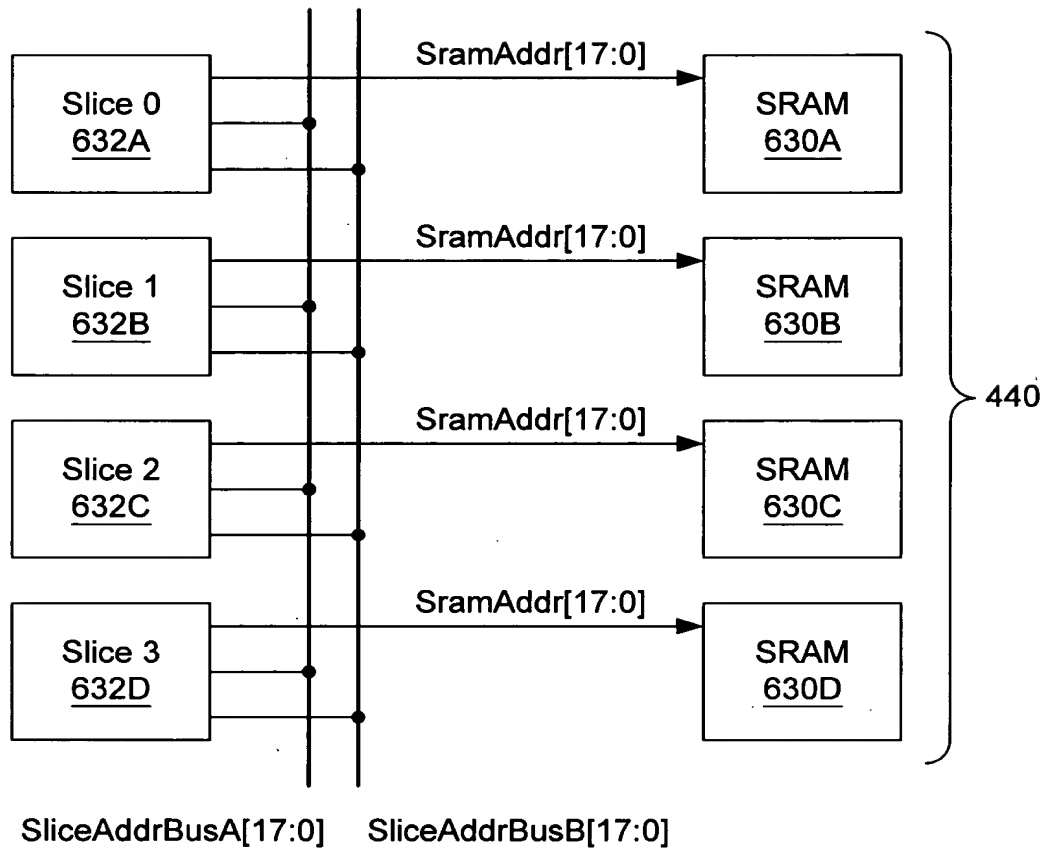
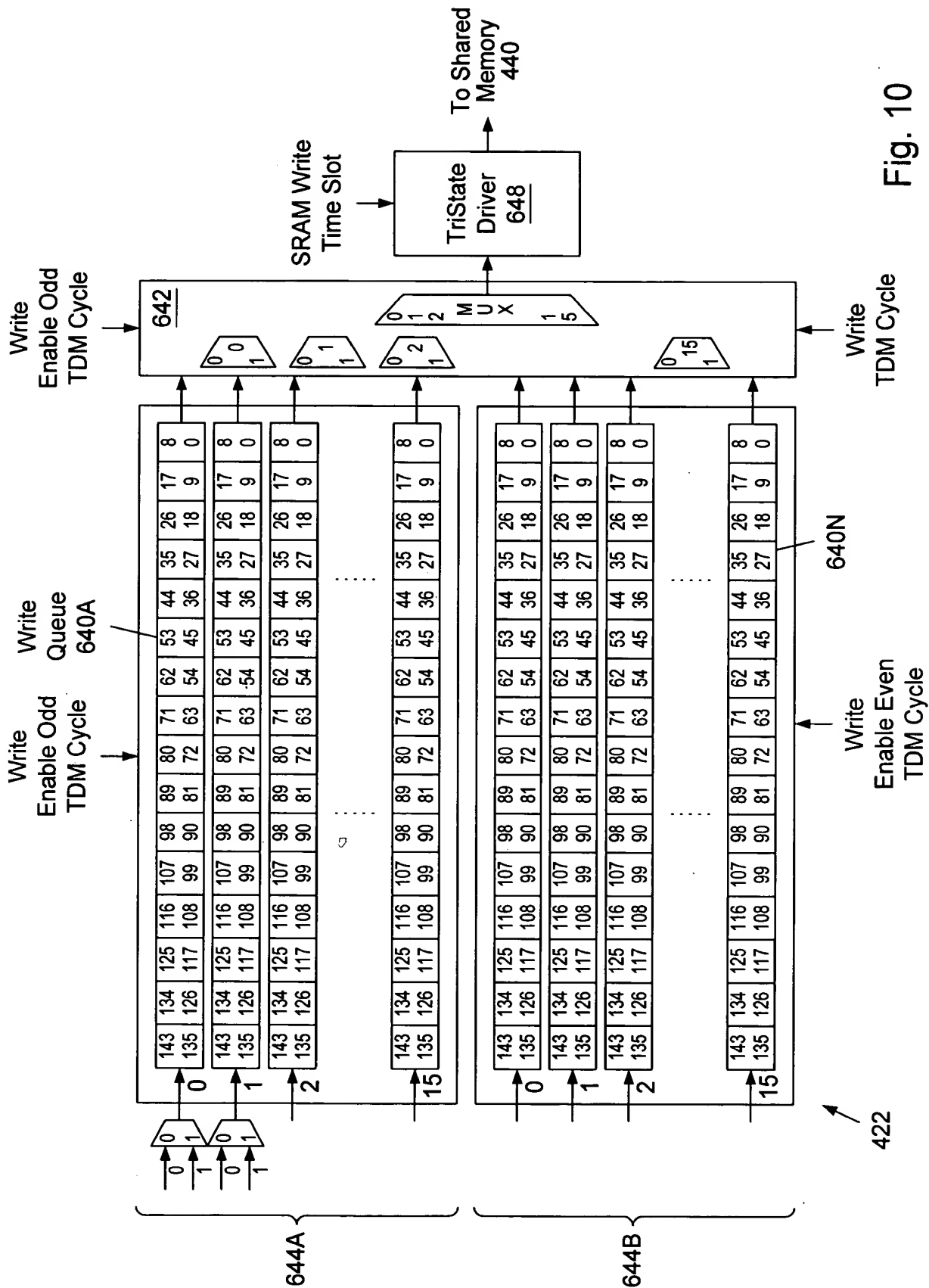


Fig. 9





422

Fig. 10

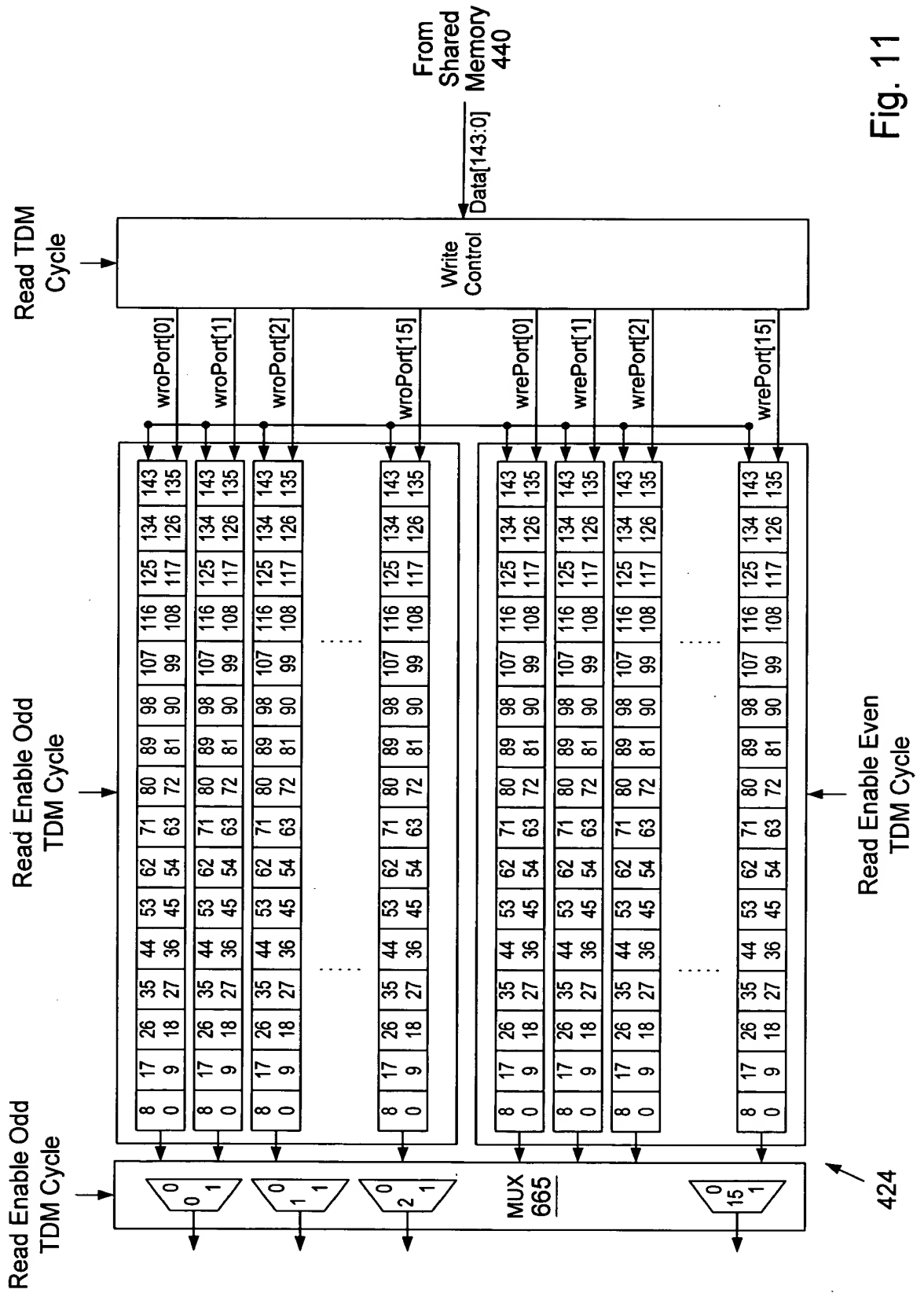


Fig. 11

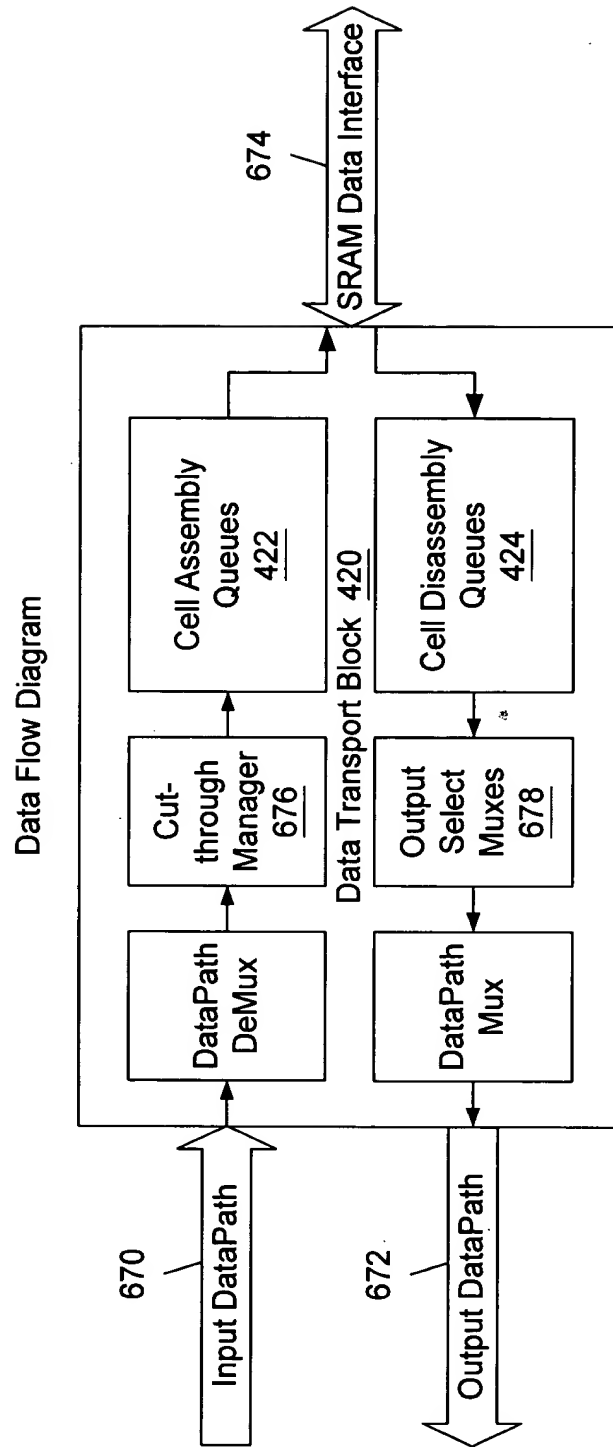


Fig. 12

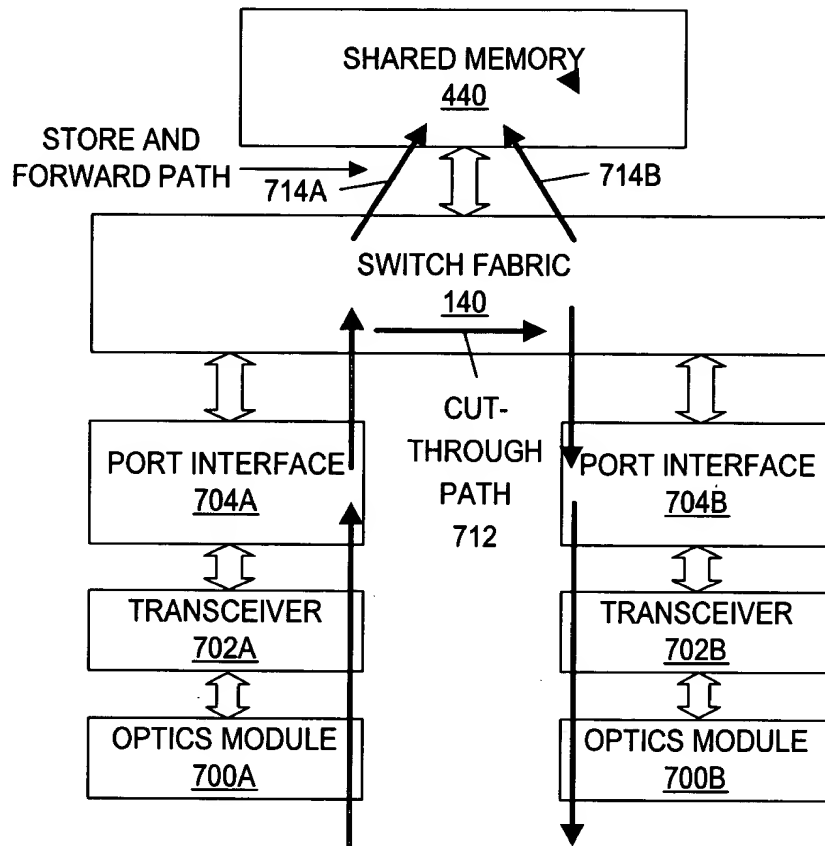


Fig. 13

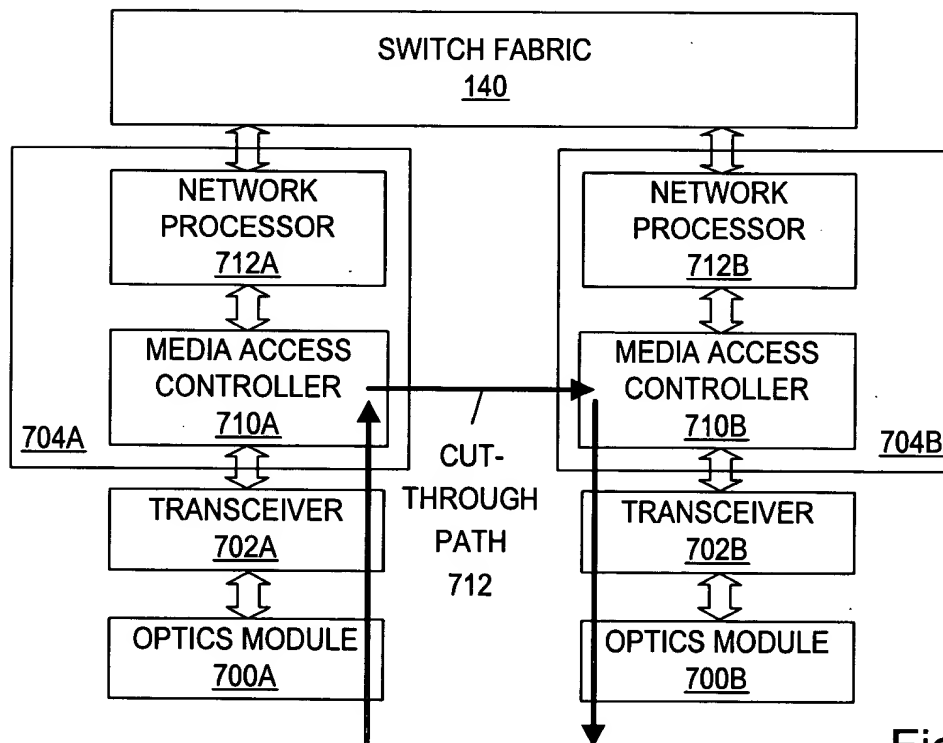


Fig. 14

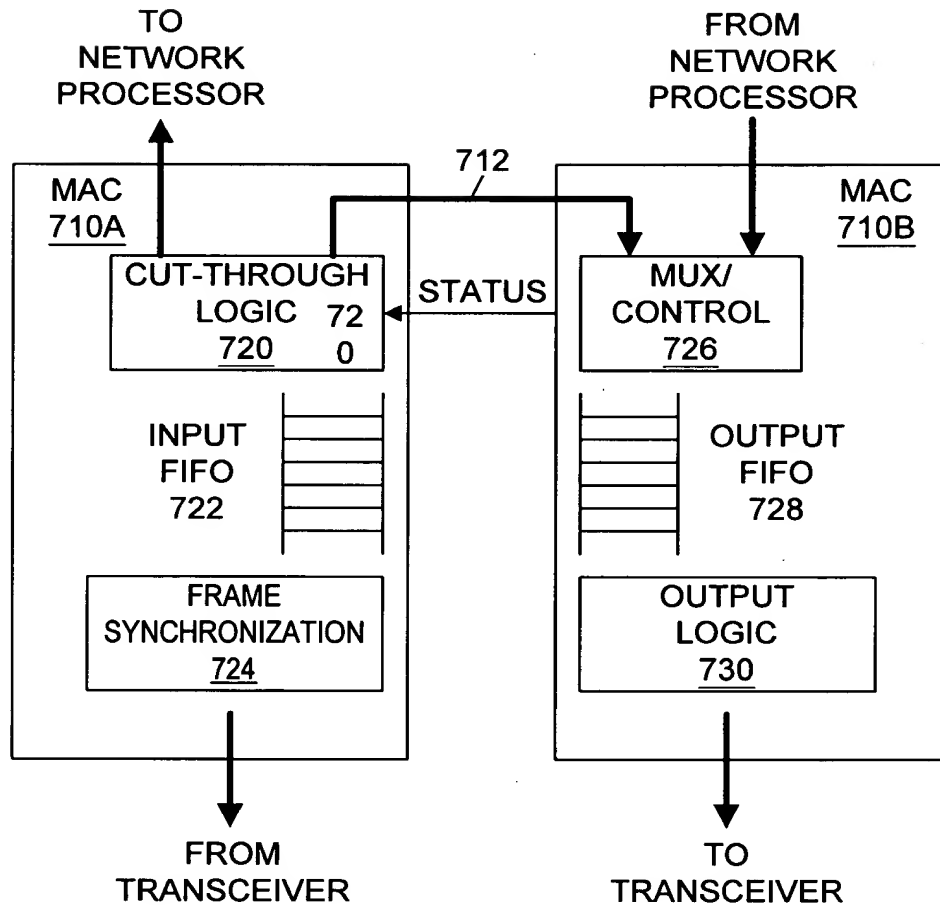


Fig. 15

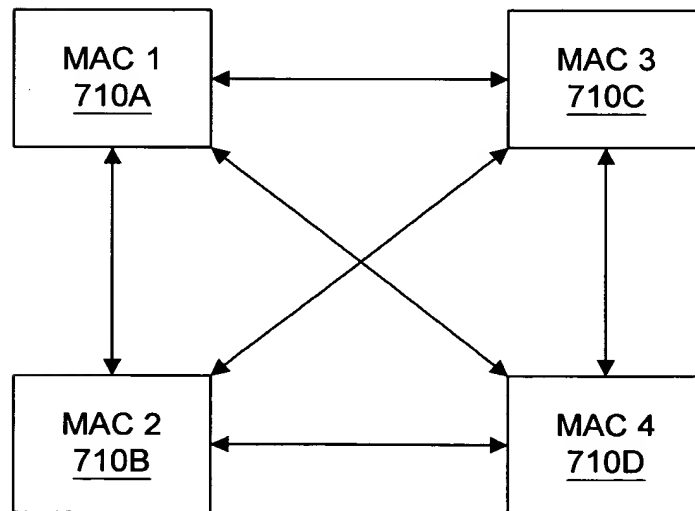


Fig. 16A

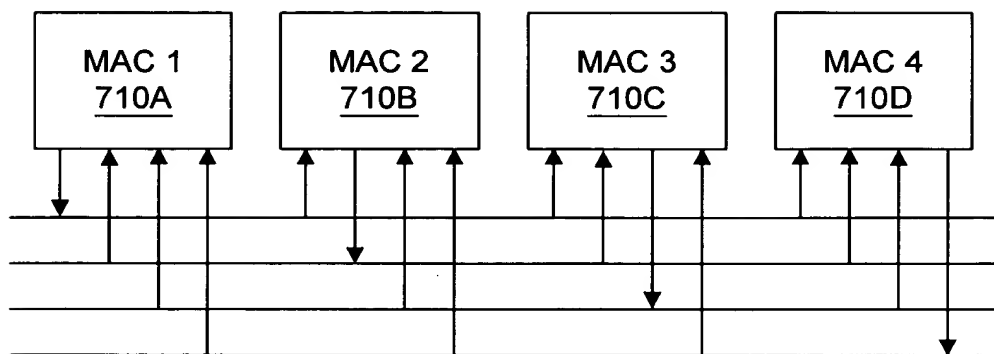


Fig. 16B

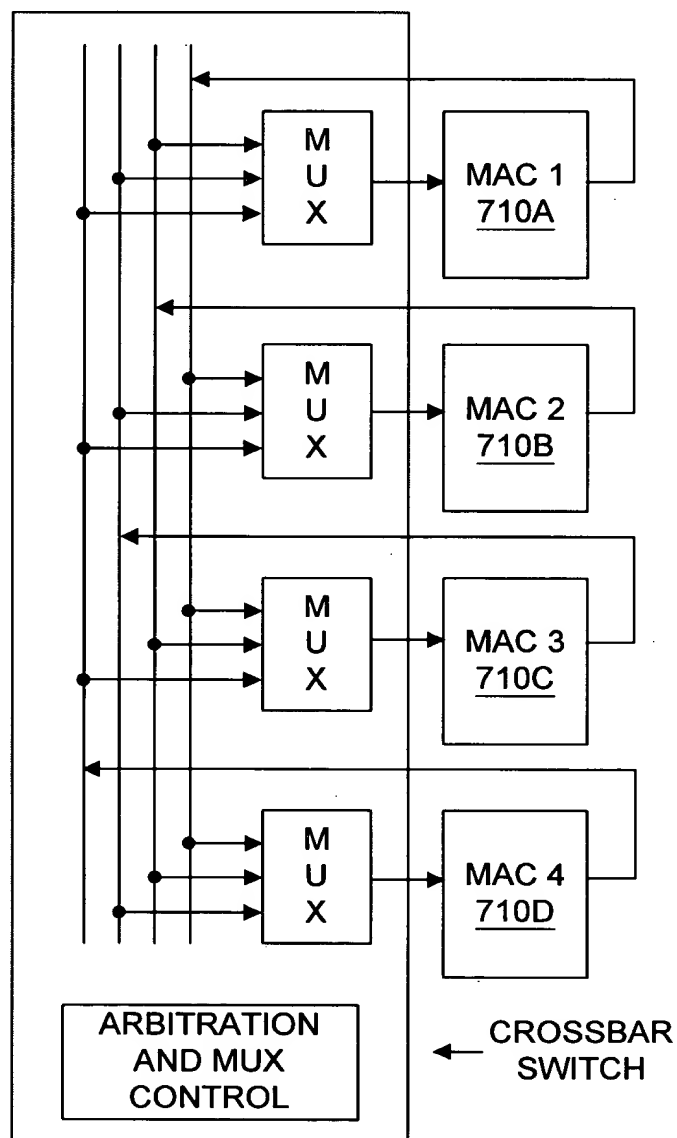


Fig. 16C

## OSI MODEL

LAYER	LAYER NAME	FUNCTION
7	APPLICATION LAYER	PROGRAM-TO-PROGRAM COMMUNICATION.
6	PRESENTATION LAYER	MANAGES DATA REPRESENTATION CONVERSIONS. FOR EXAMPLE, THE PRESENTATION LAYER WOULD BE RESPONSIBLE FOR CONVERTING FROM EBCDIC TO ASCII.
5	SESSION LAYER	RESPONSIBLE FOR ESTABLISHING AND MAINTAINING COMMUNICATIONS CHANNELS. IN PRACTICE, THIS LAYER IS OFTEN COMBINED WITH THE TRANSPORT LAYER
4	TRANSPORT LAYER	RESPONSIBLE FOR END-TO-END INTEGRITY OF DATA TRANSMISSION.
3	NETWORK LAYER	ROUTES DATA FROM ONE NODE TO ANOTHER.
2	DATA LINK LAYER	RESPONSIBLE FOR PHYSICAL PASSING DATA FROM ONE NODE TO ANOTHER.
1	PHYSICAL LAYER	MANAGES PUTTING DATA ONTO THE NETWORK MEDIA AND TAKING THE DATA OFF.

Fig. 17

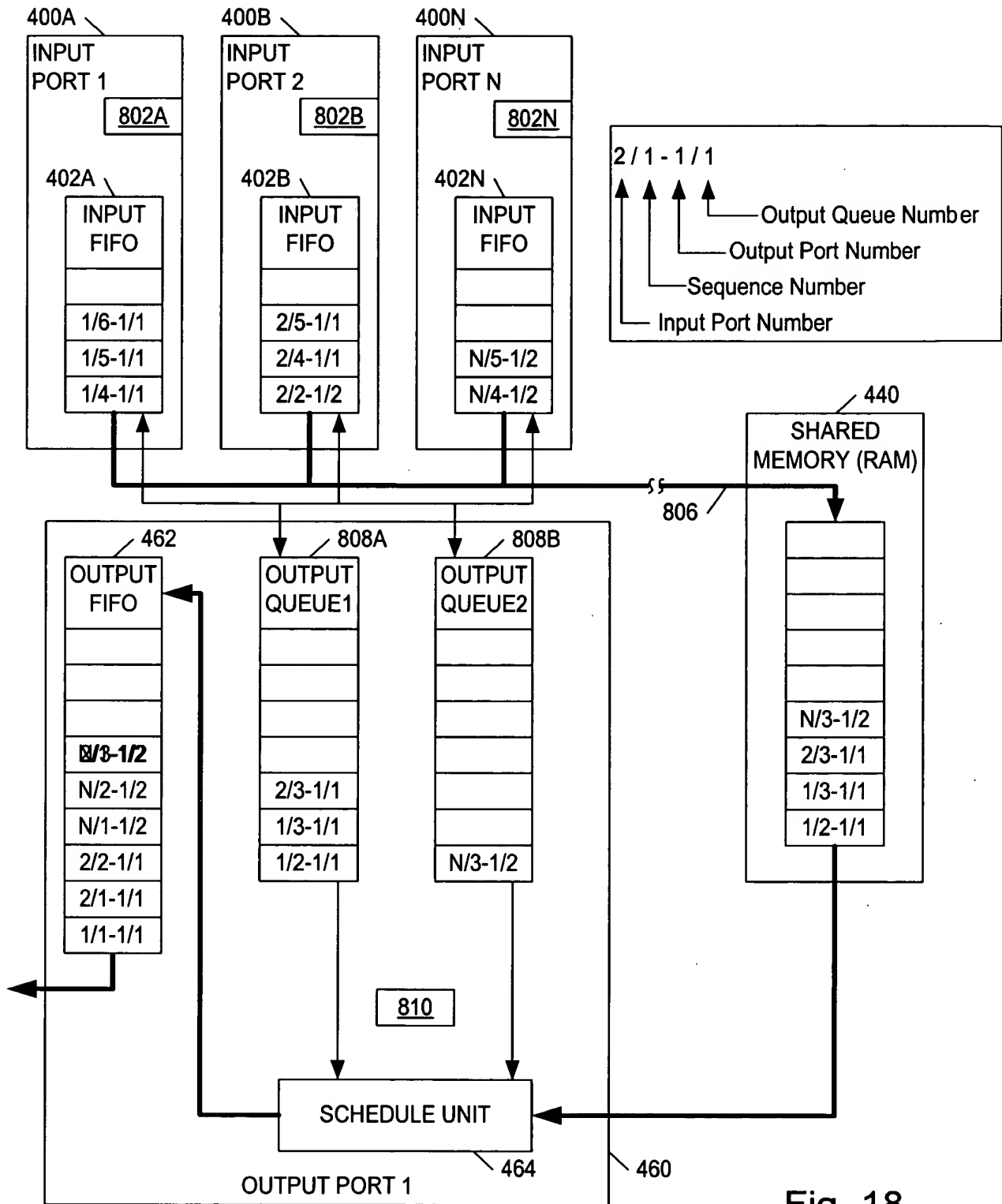


Fig. 18